THE OPEN UNIVERSITY OF SRI LANKA

B.Sc. / B.Ed. DEGREE PROGRAMME – LEVEL 04

BOU2103/ BOE4103- PRINCIPLES OF MICROBIOLOGY

OPEN BOOK TEST – 2011/2012

DURATION: ONE (01) HOUR.

Reg. No. .....

DATE : 9th September 2011 TIME : 4.00 p.m. – 5.00 p.m.

Answer All Questions.
Questions should be answered on the question paper itself.

01. Write down the term explained by each of the following phrases:

a) A culture medium containing natural substances of unknown composition is referred to as a .....

b) Organisms which are difficult to culture on basic culture media due to their complex nutritional requirements are referred to as .....

c) A substance produced by microorganisms which can be toxic to other microorganisms is an .....

d) Microorganisms which can grow and fully develop only in association with appropriate living hosts are referred to as .....

e) Reproduction of a bacterial cell by forming two identical cells is referred to as .....

f) The initial phase in a typical bacterial growth curve where there appears to be no growth in terms of increase in cell numbers is referred to as .....

g) The metabolically inert state of viruses, when outside living cells, is known as .....

h) The protein coat surrounding the nuclear material of a virus is the .....

i) Cleaning of pollutants and detoxification of toxins using microorganisms is known as .....

j) Microorganisms with high temperature optima are known as .....

(3 x 10 marks)

02. State the scientists associated with each of the following:

a) The first person to observe and report the presence of organisms that we now refer to as 'Microorganisms' .....

b) The pioneer to use aseptic techniques for surgery.....

c) The person who initiated immunization by using cow-pox virus .....

d) 'The father of Microbiology' .....

e) Introduction of chemotherapeutic agents .....

f) Performed the classical experiments using Goose necked flasks to disprove abiogenesis .....

(3 x 6 marks)

03. Briefly explain the <u>use</u> and the <u>principle</u> behind each of the following apparatus:

a) Lamina flow cabinet (microbiological safety cabinet)

Use: .....

Principle:

- .....
- .....
- .....
- .....

.....

b) Anaerobic jar

Use: .....

Principle:

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- .....
- .....
- .....

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c) Shaker with rotary motion

Use: .....

Principle:

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(4 x 3 marks)

04. Differentiate between each of the following terms.

a) Batch cultures and Continuous cultures.

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b) Selective media and Basal media

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.....	.....
.....	.....

c) Virulent phages and Temperate phage.

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.....	.....
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(5 x 3 marks)

05. Briefly explain the following statements.

a) Bacteriophages form 'plaques' on a lawn of bacterial growth.

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b) Leaves are dusted with 'Carborundum' during mechanical transmission of plant viruses.

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(5 x 2 marks)

06. Name <u>one</u> organism as an example for <u>each</u> of the following.

a) A photoautotroph that uses organic carbon as its only carbon source-

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b) Viruses capable of attacking bacteria are known as -

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c) An example for an obligate anaerobe-

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d) A bacterium frequently used in pest control-

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e) An algae commonly used in the food industry-

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(3 x 5 marks)